

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1.-156. (canceled)

157. (presently amended) A method for reprogramming a non-dividing nucleus, comprising contacting said nucleus with a cytostatic factor-containing cytoplasm of a cell in meiotic metaphase II and contacting said nucleus with an activating egg cytoplasm, wherein said nucleus and said cell are of the same species and wherein said nucleus is reprogrammed to undergo nuclear swelling, nucleic acid replication, and entry into mitosis.

158. (canceled)

159. (presently amended) The method of claim 158 157, wherein said activating egg cytoplasm is at a time in the cell cycle prior to cell cycle S-phase.

160. (previously amended) The method of claim 157, wherein said nucleus is reprogrammed to undergo DNA replication.

161. (previously amended) The method of claim 157, wherein said egg cytoplasm comprises an activation activity of 70% or greater of peak activation.

162. (presently amended) A method for reprogramming a somatic cell nucleus for transplantation into an egg, comprising
contacting said nucleus with an cytostatic factor-containing cytoplasm of a cell in meiotic metaphase II prior to activating said nucleus with an activating egg cytoplasm;
transplanting said nucleus into an enucleated recipient egg;
wherein said nucleus is reprogrammed to direct development of a cloned organism after transplantation into said recipient egg, and wherein said nucleus, said cytostatic factor-containing cytoplasm, said activating egg cytoplasm and said recipient egg are of the same species.

163. (presently amended) A method for *in vitro* activation of a non-dividing nucleus, comprising the steps of:

- (a) providing an isolated somatic cell nucleus;
- (b) pretreating said isolated nucleus with a cytostatic-factor containing cytoplasm ~~to yield a pretreated nucleus~~; and
- (c) contacting said ~~pretreated~~ nucleus with an activating egg cytoplasm;
wherein said ~~pretreated~~ nucleus is activated to undergo DNA replication, and wherein said nucleus, said cytostatic factor-containing cytoplasm, said activating egg cytoplasm are of the same species.